UNITED STATES DEPARTMENT OF AGRICULTURE
STATES RELATIONS SERVICE
A. C. TRUE, Director.

OFFICE OF HOME ECONOMICS.

-1-

HOUSEHOLD WASTE AND WAYS TO AVOID IT.
By Caroline L. Hunt.
Specialist in Food Preparation and Use.

This circular is addressed to housewives in urban districts particularly those connected with women's organizations. It has to do with those forms of waste which come from ignorance of bodily needs and of food values. In preparing it, the Office of Home Economics has not overlooked the waste which comes from throwing away materials which might serve as food. It takes for granted that thoughtful, intelligent housekeepers in all parts of the country have passed beyond the need of warning on this point, and are ready to study food requirements and food values and to make an effort to adjust the amount of food purchased more closely to the real needs of their families.

Housewives in urban districts who are connected with women's organizations can be addressed on this subject as a group for they have certain problems, privileges, and opportunities in common. As individuals they have in common the problems connected with supplying food under town conditions and at town prices for persons who do light or moderate muscular work as distinguished from heavy muscular work like farm labor. These problems are, of course, quite different from the food problems of farm women. As a group, city housekeepers have unusual opportunities to get the information about food values and food requirements, which is neces-

---

1 Prepared under the direction of C. F. Langworthy, Chief, Office of Home Economics.

sary for reducing waste without sacrificing health and efficiency. This information they can get in study classes, lectures, etc. As a group, too, they have unusual opportunities to make public through the newspapers, by means of exhibits, and otherwise, the results of any studies in economy which they may make. In this way they can be of assistance to other women in their localities.

The possibilities of saving in the ways mentioned here, i. e., by a closer adjustment of foods purchased to the needs of the family, are very great. If each of the 20,000,000 families in the United States is using a quarter of a pound of meat a day over and above all the food that is needed for health, there is an unnecessary drain upon the nation's food supply amounting to 5,000,000 pounds of meat a day. How can the housekeeper know whether or not this kind of waste is going on in her home? How much must she know about food values in order to estimate the needs of her family and to calculate the nutritive value of what she serves?

The Amount of Food Needed.

Students of nutrition and dietetics state the needs of the body in terms of protein, fat, carbohydrates, iron, compounds of calcium and phosphorus, calories, etc., and many housewives are familiar with the meaning of these terms. The terms are, however, not generally used in discussing the food problems of the household, and fortunately dietetics as an art can be taught without them. The Office of Home Economics has been trying to work out satisfactory ways of doing this and has adopted the practice of stating food requirements in terms of well-known food materials rather than chemical compounds whenever the

subject of discussion is marketing or meal planning.

In Farmers' Bulletin 808, which may be obtained free from the U. S. Department of Agriculture, or from one's Congressman, the statement is made that a man would probably get the food which he needs daily, if supplied with the following:

> Nearly a pound of such cereal foods as wheat or rye flour, oatmeal, corn meal, rice, etc.
>
> Twelve ounces of food from the class which may be called "Meats and Meat Substitutes"; that is, moderately fat meats and poultry, fish, eggs, cheese, dried legumes (beans, peas, lentils, cowpeas, soy beans, peanuts, and some of the nuts). Milk (whole and skim) and also buttermilk belong among these foods, but because of the large amount of water they contain half a glass, or 4 ounces, of any one of them would be required to equal 1 ounce of any of the others.
>
> One and one-quarter pounds of food from the following: Fresh fruits and green or root vegetables.
>
> Two ounces, or 1/4 cup, of sugar or 1/3 cup of honey or sirup or equivalent amount of other sweet.[1]
>
> Two ounces or 1/4 cup of butter, meat drippings, oil, lard, or other fat.[1]

If the above estimate is incorrect , it errs in being too high rather than too low. It is, therefore, on the safe side, as it obviously should be, for a lowering of the food standard might endanger national efficiency.

There are many other combinations of foods which would have about the same food value and be equally wholesome and attractive. These and also the ways of changing the food requirement of a man to the food requirement of a family will be discussed later in this circular .

---

1 Fats and sweets are to a certain extent interchangeable, because both, as a rule, supply fuel only. In substituting one for the other, however, the fact should be kept in mind that it takes about 2 tablespoons of sugar to equal 1 tablespoon of fat in fuel value.

Common Food Materials Grouped According to Their Uses.

The foods mentioned above may be grouped under five heads according to their composition and uses to the body. These groups are as follows:

Group I, Fruits and Vegetables. This group includes fresh and dried fruits, root and salad vegetables, greens, etc. These foods contain exceptionally large amounts of mineral matters, particularly iron, in comparison with other nutrients. Without them the diet would be lacking in mineral substances and also in bulk, in substances believed to be needed to offset certain acid substances produced in the digestion of meat and eggs, and in other body-building and body-regulating substances.

Group II, Meats and Meat Substitutes. These include milk (whole and skim), buttermilk, cheese, eggs, lean or moderately fat meat, poultry, fish, sea foods, dried legumes, and some of the nuts. These foods are rich in protein as compared with other nutrients, and without a small amount of them, the diet would be lacking in this indispensable body-building material.

Group III, The Cereal Grains and Other Products. The cereal grains include wheat, corn, oats, rice, rye, and barley, which are served in the form of bread, cereal breakfast foods, side dishes with meats, desserts, and many other ways. They contain exceptionally large amounts of starch, and are also important sources of protein. Without them the diet would be lacking in protein, unless Group II were drawn upon too heavily for economy and health.

Group IV, Sweets. These include cane sugar in its various forms, maple sugar, molasses, sirups, honey, candy, and other foods which

consist wholly or chiefly of sugar. Without them the diet would be lacking in sugar, a fuel substance which is quickly absorbed and utilized by the body and is also valuable for flavoring purposes.

Group V, Fatty Foods. These include butter and other table fats; lard, suet, and other cooking fats; table and salad oils; salt pork and bacon; cream and other foods consisting largely or chiefly of fat. Without them the diet would be lacking in fat, an important fuel, needed also to make the diet attractive by giving it richness. Without them it is believed, too, that food is very rapidly absorbed and that hunger returns sooner than is desirable.

These groups and the foods in each of them are discussed in a series of bulletins now being issued by the Office of Home Economics as rapidly as the circumstances permit.

It is believed in the Office of Home Economics that the statement of food requirements in terms of these five groups of food materials will be more useful to the average housekeeper in marketing and planning meals than the same kind of a statement in terms of protein, fats, carbohydrates, etc. It is believed also that the mental habit of classifying foods in the way suggested will help her to plan closely without endangering the well-being of the members of her household.

Various Lines of Economy.

In connection with the above or any other ration there are at least three possible kinds of economy. These are as follows:

1. Making use of all materials paid for. To illustrate: The outer and tougher leaves of lettuce can be shredded and used in salad

or chopped and used in soup. If this is done, they count toward the required amount of fruits and vegetables. A cupful of skim milk is equal in protein value to an egg or 2 ounces of many kinds of meat. Such milk can be used in cooking cereal mushes, in making bread, and in many other ways, and can thus be made to count toward the required amount of meat or meat substitutes. Stale bread used in thickening stewed tomatoes, in making escalloped dishes, puddings, etc. counts toward the cereal requirement. Many other examples of the possible uses for food materials sometimes thrown away will occur to the careful housekeeper.

2. Substituting low-priced for high-priced foods of the same food value. Within each group there are possibilities for saving. To illustrate: Cereals vary in price from 48 cents a pound (15 cents for a 5-ounce package) to those which may be obtained for 4 or 5 cents by grinding wheat in the household. There are low-priced cuts of meat, which have much the same food value as higher-priced cuts. Dried fruits serve the same purpose in nutrition that fresh fruits do and in city markets usually supply the same amount of food for less money. Many other cases of this kind, which give opportunities for what have come to be known as "substitution" economies, will occur to the thoughtful housewife.

3. Saving by varying the relative amounts of food selected from the different groups. This has special reference to the meat and meat substitute group and the cereals, respectively. In the usual diet of city people, and, for that matter, of most people everywhere, practically all of the protein of the diet comes from these two groups. It is

only in the case of people who are able to get unlimited quantities of fresh fruits and vegetables, including fresh legumes, peas, beans, etc., which are richer in protein than most of the other fresh vegetables, that the protein from other sources counts up to any great extent. Even in these cases the amount of protein obtained from fruits and vegetables is not large when compared with that obtained from meat, milk, eggs, cereals, etc. It is safe, therefore, particularly in cities, to act on the principle that all of the protein which is not obtained from Group II (meats and meat substitutes) must be obtained from Group III (cereals) and vice versa, and in varying relative amounts of these two kinds of food there is often opportunity to save.

Diets in which cereals are used largely and in which such foods as milk, eggs, meat, etc. are used sparingly, may be described as "plain." They need not, however, be unattractive, and they will not be if good bread is served, if other cereal foods are used in variety and are carefully cooked and seasoned, and if care is taken to "extend" the flavor of savory substances, like meat, over a large amount of cereal. Extending flavor is a common practice. It is done, for example, by cooking or serving a little smoked or dried meat or fish, or combination of meat and highly flavored vegetables, with a large amount of boiled rice or macaroni, or by making a savory soup the means of tempting people to eat a large quantity of bread.

In the man's ration, for which figures are given above and which is rather plain, about half of the protein comes from cereals and half from meat, milk, eggs, etc. It would be possible to increase the

amount of cereal slightly with a corresponding decrease of the other kinds of foods, but this would hardly be desirable, except in cases where the strictest economy is necessary. Such a diet would have to be prepared with great care. Savory soups and stews should be served and puddings in which a large amount of cereal is combined with a small amount of tart fruit, such as apples, rhubarb, or raisins. It would be desirable to use a variety of cereals cooked and served in many different ways - mushes with milk, sirup or fruit, fried mush, etc. A "high-cereal" diet demands foresight and care for its satisfactory preparation.

At the opposite extreme from the "high-cereal" diet is one of the same food value in which cereals are reduced to about 9 ounces and meats, eggs, milk, cheese, etc. correspondingly increased. In such a diet the amount of fruits and vegetables should be increased in order to offset the extra meat used. It would be necessary, too, to use more fats or sweets to make up for the starch lost through the cutting off of cereals, and this would tend to give flavor and richness. Every housekeeper will recognize at once that such a combination of foods would be very easy to make into an attractive diet. She will see at once also that it would not be cheap.

The extremes in choice between the foods of the various groups in the diet of a man at moderate muscular work are about as follows:

	Rich and comparatively expensive diet.		Plain and comparatively cheap diet.	
Cereals	from	9 oz.	up to	20 oz.
Meats, eggs, cheese, etc.	from	16 oz.	down to	10 oz.
(In this 4 oz. of milk may be substituted for about 1 oz. of any of the others.)				
Fruits and vegetables	from	2 lbs.	down to	1 lb.
Fats	from	3 oz.	down to	1 1/2 oz.
Sweets	from	3 oz.	down to	1 1/2 oz.

The question will naturally arise whether this estimate in which quite different foods (like milk and dried legumes, to choose one example) are grouped under one head will be a safe guide. No claim is made for great exactness. It may, however, be said that the foods in either the rich or the plain diet or in any diet coming in between the two, would supply about 3,000 calories and 90 to 100 grams of protein, providing a variety is chosen from each group. There are, of course, some foods in each group that have higher food values than others in the same group, and in making the estimate average food values were taken into consideration. Taking Group II for illustration, it may be said that if a person uses only lean beef, 12 ounces will be more than he needs. If, on the other hand, he selects only oysters, 12 ounces will not be enough. The estimate is based on the supposition that most people eat a varied diet, using from time to time flesh foods, milk, cheese, eggs, dried legumes, nuts, and other protein-rich foods, and a variety of foods from other groups.

Family Rations.

In calculating a family ration from the amount specified for a man, it is generally estimated that the average woman requires eight-tenths as much as a man. Boys and girls who have reached the period

of adolescence and are active probably need as much food as men and women. Adults who live sedentary lives need about eight-tenths, and those who do hard physical labor need 1 1/4 to 1 1/3 times as much as those who do moderate muscular work. A child who has passed infancy and is below the period of adolescence probably requires somewhere between four-tenths and eight-tenths as much as a man or a woman, the amount, of course, depending on whether he is near the upper or lower limit of the age specified. If there is a young child in the family whose diet is closely prescribed by a physician or regulated in accordance with the directions of a specialist in infant or child feeding, his food supply should be reckoned separately from that of the rest of the family. Such children are not taken into consideration in the following family estimate.

Daily Food Requirement for a Family.

(Man and woman doing moderate muscular work and three children between 3 and 12 years of age.)

The man	needs	1.0	ration	as given	on page	3.		
The woman	"	.8	"	"	"	"	"	"
The oldest child	"	.6	"	"	"	"	"	"
The second child	"	.5	"	"	"	"	"	"
The youngest child	"	.4	"	"	"	"	"	"
		3.3	rations	"	"	"	"	"

This family requires about 3.3 times as much food as one man. This would be supplied by

Cereals	3	- 4	lbs.
Meats and meat substitutes	2 1/2	- 3 1/2	lbs.

(For every young child in the family take off 1/2 lb. and substitute a quart of milk.)

Fruits and vegetables	4	- 8	lbs.
Fats[1]	6	- 10	oz.
Sweets[1]	6	- 10	oz.

Recommendations of the Office of Home Economics.

The specific recommendations of the Office of Home Economics to club leaders are as follows:

1. Get members of your club to try to find out how much food from each one of the five groups they provide per day, calculating either from the amount supplied daily, weekly, or yearly, as most convenient. This should lead naturally to a consideration of the amounts of food obtained from a given sum of money and the proportion of refuse in various kinds of foods. It should lead the housekeeper to consider also whether or not she is taking home and using carefully all the food she pays for.

2. Get them to form some idea of how the food requirements of the families compare with the "per-man per-day ration" described here, which is the unit used in all discussions of food economy. The food requirement of the family will, of course, depend upon the number in the family, the season, the ages and occupations of the various members, and the number of meals taken away from the home. Study classes under trained leaders would doubtless help to an understanding of this and other matters connected with nutrition. Books on nutrition, which are to be found in every public library, should also be helpful.

1 See footnote on page 3.

3. If a housekeeper finds that the food she is serving comes near the upper limit so far as the amount of fruits, vegetables, meats, eggs, milk, butter, sugar, etc. are concerned, she should consider carefully whether the extra expense is socially justifiable. Carefully prepared reports on this subject by women who believe they are justified in paying more for food than is actually necessary should lead to rational discussions of the subject. One woman may be providing for persons under great nervous strain, whose appetites need to be tempted; another for sick or aged, who need delicacies. Another may, for one reason or another, be compelled to economize on time rather than on money, and will, therefore, be obliged to use foods that are quickly and easily prepared, even if they are expensive. All these points should be brought out and discussed.

4. Get the club members to work together to make bills of fare which utilize low-priced food material, particularly those characteristic of your locality, taking into account always amounts as well as kinds of food and also prices.

5. After the subject has been discussed thoroughly in your club, have an exhibit or in some other way bring before the housekeepers of your district economical bills of fare and other helpful suggestions on food economy.

6. Write the Office of Home Economics, U. S. Department of Agriculture, Washington, D. C. telling how you think this circular could be improved. Tell what you think of the amounts of food recommended. If you think there is too much or too little from any group, be sure to tell whether your criticisms are based on experience or on the teachings of some particular school of dietetics. The Office is constantly in

[illegible]

receipt of helpful suggestions from housekeepers and will be glad to receive them on the subject with which this circular deals - the adjustment of the amounts of foods purchased to real body needs.

The time has come when the food requirement of the nation must be accurately estimated and its food supply carefully conserved. In theory its food requirement is the sum of the food requirements of the individuals who compose it. In practice, however, its food requirement, and consequently its necessary food supply, must include provision for a certain amount of loss in the course of transportation and manufacture, preparation for the table, etc. Part of this loss is unavoidable. Another part is recognized as avoidable, and this is called "waste." It is for the housekeepers of the country to reduce that part of the waste which occurs between the market and the table.

May 9, 1917.

[illegible]

[illegible] on the [illegible] which the [illegible] basis - [illegible]

[illegible] the [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] time [illegible] [illegible] the [illegible] requirements of the [illegible] [illegible] economically [illegible] and the [illegible] supply [illegible] only [illegible]. In [illegible] the [illegible] requirement is the sum of the [illegible] [illegible] [illegible] individuals [illegible] comprise it. In practice, however, the [illegible] requirement [illegible] correspondingly its necessary [illegible] supply. [illegible] [illegible] [illegible] certain amount of [illegible] in the course of [illegible] [illegible] preparation for the table, [illegible] [illegible] [illegible] [illegible] another part is recognized as available, and it is called "[illegible]," [illegible] for the [illegible] of the country to reduce that part of the [illegible] which [illegible] between the [illegible] and [illegible].

[illegible] 3, 1917.